

A Descriptive Analysis of the Impact of LIFO Repeal

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A Descriptive Analysis of the Impact of LIFO Repeal

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TABLE OF CONTENTS

ABSTRACT	3
INTRODUCTION	4
METHODOLOGY	5
LITERATURE REVIEW	6
HISTORY OF LIFO INVENTORY ACCOUNTING	9
LIFO IN CURRENT EVENTS	14
MERITS OF LIFO	18
SHORTCOMINGS OF LIFO	20
FINANCIAL CONSEQUENCES OF LIFO REPEAL	22
CONCLUSION	30
EXHIBIT A - LIFO USAGE BY INDUSTRY	33
EXHIBIT B - AVERAGE LIFO RESERVE SIZE	35
EXHIBIT C - LIFO RESERVE AS A PERCENTAGE OF NET INCOME	37
EXHIBIT D - LIFO RESERVE AS A PERCENTAGE OF TOTAL ASSETS	39
EXHIBIT E - LIFO RESERVE AS A PERCENTAGE OF TOTAL INVENTORY	41
EXHIBIT F - CHANGE IN YEARLY INCOME TAX BILL FROM LIFO TO FIFO	43
EXHIBIT G - ONE-TIME TAX BILL FOR CONVERSION FROM LIFO TO FIFO	45
EXHIBIT H - CHANGE IN YEARLY INCOME TAX BILL FROM LIFO TO FIFO AS A PERCENTAGE OF OPERATING CASH FLOW	47
EXHIBIT I - ONE-TIME TAX BILL FOR CONVERSION FROM LIFO TO FIFO AS A PERCENTAGE OF OPERATING CASH FLOW	50
EXHIBIT J - CHANGE IN LIFO RESERVE OVER TIME	52
BIBLIOGRAPHY	53

ABSTRACT

Politicians, accountants, and businesspersons have debated the merits of Last-in, First-out (LIFO) inventory accounting for decades. With the inauguration of a new president and increasingly global business markets, this matter is again rising to the forefront of policy debates. It is especially relevant given the likely adoption of International Financial Reporting Standards (IFRS) in the United States. Under IFRS, LIFO would no longer be an option for financial accounting purposes. Though researchers and pundits have written to express strong opinions on this matter, there exists no comprehensive analysis of the effects that a repeal of LIFO would have on the nation. This paper seeks to conduct this analysis and determine the potential effects of LIFO repeal through a qualitative analysis of the merits and shortcomings of LIFO as well as through a quantitative analysis of the industries that would be most affected by LIFO repeal and the tax consequences they would face. This paper looks to make an assessment of the feasibility of LIFO repeal based on these analyses, and to conclude whether LIFO repeal would be beneficial for the nation.

INTRODUCTION

An important part of any company's accounting system is its choice of inventory valuation method. Depending on the nature of the business, this choice can have a large impact on the company's financial position. Under the United States Generally Accepted Accounting Principles (US GAAP), there are several inventory accounting options from which companies can choose, including First-in First-Out (FIFO), Last-In First-Out (LIFO), and Weighted Average. LIFO (FIFO) inventory accounting assumes that the newest (oldest) items purchased are the first to be sold. Therefore, under LIFO, a company's ending inventory consists of the oldest-priced items on hand, and the cost of goods sold consists of the newest-priced items. As prices for inventories rise over time, the value of the older-priced inventory on the books becomes more antiquated, thereby distorting balance sheet inventory accounts. Having higher priced inventory booked to cost of goods sold also lowers a company's net income compared to what it would be under another inventory accounting method, thus reducing its tax liability. However, the company has not actually incurred any additional costs compared to an identical company using the FIFO method. This difference has led some to claim that LIFO is merely a way for companies to reduce their tax liability. To prevent companies from taking advantage of these lower income figures for tax purposes but reporting the higher FIFO earnings to shareholders, the government instituted the LIFO conformity rule. This rule states that companies that choose to use LIFO for tax accounting purposes must also use LIFO financial reporting purposes. This deters companies from using LIFO because they have to face the negative consequence of reporting lower income to shareholders. Despite this disincentive, there are still calls for the full repeal of LIFO from the government, academic, and business realms.

The LIFO option has been controversial since its inception, and experts have debated for decades whether it should be repealed. Though the debate had fallen to one side, current developments in international accounting legislation and governmental policy have brought this topic back to the attention of the business world. The accounting community and the government have been talking with increasing seriousness about incorporating or completely adopting International Financial Reporting Standards (IFRS) in the United States. LIFO is not allowed under IFRS; thus, switching from US GAAP to IFRS would mean the repeal of LIFO. Furthermore, the new administration of President Barack Obama has also discussed repealing LIFO as part of future budget plans to raise additional tax revenue during these trying economic times. These developments make it quite likely that LIFO will be repealed in the United States in the relatively near future. That is why this topic is so crucial to fully understand today—so that the nation can make the best choice for the future.

METHODOLOGY

This paper will first review the existing literature on the topic of LIFO reform. The paper will present the history of LIFO to help understand its controversial origins and why it has always been so hotly debated. It will then examine the relevant current events that make this topic so important to the accounting world today. The findings of these articles provide a good look at the potential impact of LIFO repeal in the United States. However, there are several pertinent issues that have not yet been addressed. No study has examined comprehensively the impact that this repeal would have on an industry-by-industry basis as well as detailed the companies' abilities to deal with its consequences. This paper seeks to answer these and other

questions and provide a more comprehensive view of the controversy surrounding LIFO reform. It will then explore the pros and cons of using LIFO and of having LIFO as a legal option from the point of view of the companies using it and of the government.

Once an analysis of the qualitative reasons for LIFO repeal has been completed, a quantitative analysis will be conducted. Data collected from Standard & Poor's Compustat database will be used to examine the characteristics of companies that would be most heavily affected by a repeal of LIFO. Information to be presented includes common industries and the average sizes of LIFO reserves in these industries. This analysis will also try to quantify the financial impact of LIFO repeal for the government, in terms of tax revenue to be collected, and for the companies who will have to convert, in terms of tax liability. An assessment will be made as to whether this amount is feasible for the companies that would have to convert by assessing the potential tax liability's impact on operating cash flow. This paper will also seek to demonstrate which industries will benefit and which will be harmed by LIFO repeal, and to what extent. To conclude, this analysis will combine the qualitative and quantitative arguments and make a recommendation for the future of LIFO.

LITERATURE REVIEW

There exists a substantial amount of literature discussing the reasons for and against LIFO repeal and its consequent financial effects. Some of these articles discuss the effects it would have on corporate America in general, while others focus on the changes that will come to the financial statements of affected companies. As the topic of US GAAP reform becomes more relevant to the general business public, the number of articles in the popular business press is

also growing steadily. Most of these articles debate the issue from the point of view of either the accounting industry or an industry which would be heavily affected by the switch.

Romeo (2009) examined the issue of quantifying the financial impact of LIFO repeal on the economy in his Honors Scholar Thesis at the University of Connecticut - Storrs. Romeo's (2009) objective was to examine the LIFO method and assess its effects on US financial reporting. He first provides a history of the development of LIFO, as compiled from a number of other works including the work by Lessard¹ (2007) which will be discussed later in this paper. LIFO gained popularity during the era of Roosevelt's New Deal as a way to minimize a company's liability for certain taxes. Large corporations banded together and got LIFO authorized as part of the Revenue Act of 1939. However, the merits of LIFO inventory accounting have been debated from the start. Romeo (2009) makes a series of arguments regarding the pros and cons of LIFO from a qualitative perspective. He then analyzes the effect that LIFO usage has had on financial reporting over the last ten years. Romeo (2009) illustrates that inventory valuations have been substantially understated by LIFO firms, and especially by those firms whose primary products have risen in price over time. In countering the arguments of the proponents of LIFO, he points out that the only way the differences in valuation and in income would ever be remedied would be to ban the use of LIFO. Romeo (2009) then examines the effects that LIFO repeal would have on various financial ratios. He concludes by examining the more qualitative effects of LIFO repeal, such as a concern as to whether firms would be financially able to pay all the taxes they would owe upon conversion to FIFO. He concludes that

¹ Lessard, Stephen C. "Giving Life to LIFO: Adoption of the LIFO Method of Inventory Valuation by the Income Tax Code." *Tax Lawyer* 60.3 (Spring 2007): 781-806. *Business Source Complete*. Web.

firms would not use LIFO for valid business purposes, and that they only use it to lessen their tax burden.

Comiskey, Mulford, and Thomason (2008) examine the consequences of LIFO repeal as part of the move from US GAAP to IFRS. They sought to quantify the impact of this change by examining financial data for a set of thirty firms for 2006 and 2007. The firms' LIFO financial data for these years was compared with calculations of what the data would have been if the firms had used FIFO to prepare their statements. The thirty firms included were those with the highest percentages of LIFO reserves to total assets, as they would be the most affected by the change. However, the authors are clear in pointing out that they are far from being the only firms that would see changes to their financial statements. They provide a very clear explanation of these financial statement changes and the magnitude thereof. Firstly, they found that 2007 pretax and net income for the included firms would increase by 11.97% and 7.42%, respectively, if calculated under FIFO rather than LIFO. These changes would increase the tax liability of the firms, and thus increase the tax revenue collected by the government. Furthermore, the firms' cash flows would be severely affected; in some cases, they could be forced to pay billions of dollars in additional income taxes. These changes in earnings could also affect performance-based executive earnings packages and financial ratios used in debt covenants. Comiskey, et al. conclude that the move to LIFO should not be made without considering the effects of all of these changes.

Another article by Ayres, Bauman, Bauman, and Fan (2008) also examines how LIFO repeal would impact financial ratios commonly used by industry and stock analysts using data from 2006. They divided their analysis by industry. The steel works, wholesale, petroleum and

natural gas, and chemicals industries would be the most affected by financial statement changes resulting from a repeal of LIFO. They analyze the return on common equity (ROCE) ratio, inventory turnover ratio, and current ratios, and find that substantial changes will occur in many companies. They conclude by cautioning loan officers about the changes, warning them that they are not attributable to changes in a firm's operations or management.

HISTORY OF LIFO INVENTORY ACCOUNTING

The LIFO method has been surrounded by controversy since its inception. It was incorporated into tax law in 1938 and 1939,² but almost two decades of lobbying and deliberation preceded its adoption³. As with all inventory accounting methods, LIFO was yet another attempt to match revenues to expenses in the most accurate way possible. Though proponents of LIFO claimed that the method was a better representation of income than other methods, there were also those who claimed that it was just a way to avoid taxes. The debates ebbed and flowed depending on the state of the nation's economy, but eventually LIFO lobbyists succeeded in legalizing the method. Understanding this controversy, as well as the origins and purposes of LIFO, will aid in understanding the impact of LIFO on the nation today.

The LIFO method is a derivative of the base-stock method, whose premise was that a business must keep a minimum constant inventory level to operate normally.⁴ "This constant inventory level was carved out of the company's total inventory and made a 'permanent' asset,

² Lessard, Stephen C. "Giving Life to LIFO: Adoption of the LIFO Method of Inventory Valuation by the Income Tax Code." *Tax Lawyer* 60.3 (Spring 2007): 781-806. *Business Source Complete*. Web. 781.

³ *Ibid.*, 782.

⁴ *Ibid.*, 783.

much like a piece of equipment.”⁵ This asset was valued at its original cost basis. Newly purchased inventory was written down to the original cost of the base-stock, and inventory above the base level was valued at the lower of cost or market price as it was used.⁶ This is analogous to LIFO in that both methods value goods sold at their current replacement cost rather than their cost of purchase. Both methods smooth fluctuations in profits and losses related to inventory by reducing profits in periods of rising prices and reducing losses in periods of declining prices. This helps “the results of current operations reflect as nearly as possible current market conditions.”⁷

The base-stock method was in use as early as 1903, and by 1921, ten percent of U.S. corporations were believed to be using it.⁸ The Wall Street Journal touted the method as instrumental in helping these companies weather the post-World War I depression and the stock market crash of 1929.⁹ Proponents of the LIFO and base-stock methods recognized that they were not suitable for every business, and that they were primarily useful for ““concerns whose profits and losses are seriously affected by fluctuating raw material prices.””¹⁰ However, the businesses that did wish to use the method met with opposition at the Internal Revenue Bureau (IRB), as the IRB required that taxpayers use the FIFO method. Businesses using LIFO or the base-stock method for their financial reporting needed to keep a second set of records using the

⁵ Ibid.

⁶ Ibid., 784.

⁷ Ibid.

⁸ Ibid., 785.

⁹ Ibid.

¹⁰ Ibid.

FIFO method for tax purposes.¹¹ A 1928 lawsuit brought to defend the use of the base-stock method was defeated by the Board of Tax Appeals on the grounds that the method did not conform to the best practices of the industry, that allowing its use would discriminate against the FIFO-using majority, and that it did not accurately depict a taxpayer's income as profits and losses were deferred to the year in which base inventory was liquidated.¹² This suit was carried all the way to the Supreme Court, where the ruling of the Board was upheld and the base-stock method was disallowed.¹³

Seeing the defeat of the base-stock method, supporters of LIFO abandoned the courts and shifted their efforts to lobbying and publicity. The campaign slowed during the Great Depression, as the FIFO method was preferred due to declining prices, but picked up again as the nation began to recover.¹⁴ Once again, the Wall Street Journal was used as a platform to bring the issue to the attention of the entire business world. A columnist named Arundel Cotter wrote a series of articles about both the base-stock and LIFO methods that addressed the issue from many angles and called for the legalization of the methods.¹⁵ Many touted Cotter's timely, informed and persuasive writings as crucial to the debate. The issue became particularly relevant with the proposal of an undistributed-profits tax under the Roosevelt administration. Proponents of LIFO joined forces with opponents of the new tax and lobbied Congress to prevent it. "Opponents of the undistributed-profits tax favored adoption of the LIFO method because LIFO

¹¹ Ibid., 786.

¹² Ibid., 787.

¹³ Ibid., 788.

¹⁴ Ibid., 789.

¹⁵ Ibid.

would reduce inventory profits and so reduce any required distributions to stockholders. For advocates of LIFO, the undistributed-profits tax provided additional justification for adoption of an inventory accounting method that more accurately reflected income and profits.”¹⁶ Members of professional accounting organizations, such as the American Association of Public Accountants (AAPA) and its successor the American Institute of Accountants (AIA), along with leaders of LIFO-using industries, continued to lobby Congress.

The undistributed-profits tax was eventually passed, but it made the LIFO debate even more important. Congress passed the responsibility for the decision to the Treasury Department, where LIFO was met with strong opposition based on the previous Supreme Court rulings and recommendations of the Department’s tax lawyers.¹⁷ Despite growing pressure from academia and the press and the increasingly detrimental effects of the undistributed-profits tax on certain industries, the Treasury would not relent, and LIFO proponents again took the debate to Congress.¹⁸ Led by Maurice Peloubet, a prominent public accountant and lobbyist, Congress was presented with testimony from major accounting firms, industry associations, academia, and the press that showed that LIFO was generally accepted as a sound accounting principle.¹⁹ In early 1938 an amendment was introduced to Senate committee to permit “any taxpayer to use the LIFO method as long as the method was the best accounting practice in the taxpayer’s trade or business.”²⁰ The Treasury Department continued to disapprove, citing the tax revenue that

¹⁶ Ibid., 794.

¹⁷ Ibid., 796.

¹⁸ Ibid., 797.

¹⁹ Ibid., 798.

²⁰ Ibid., 799.

would be lost under LIFO. They were also concerned that companies would continually switch between LIFO and FIFO to manipulate earnings depending on the economic environment. Congress responded to their disapproval by altering the amendment to only allow the use of LIFO to those industries with inventories in leather hides and nonferrous metals, which were the two industries that had lobbied the hardest for LIFO and who had received acknowledgement from the Treasury of their difficulties under FIFO.²¹ This amendment was incorporated into the Revenue Act of 1938, but it had only just been passed when Senators requested that the LIFO matter be reviewed yet again.

A series of conferences was held by the Treasury Department during the fall of 1938 to discuss the LIFO method, and the invitees were asked to form an Inventory Committee to study the various accounting principles concerning inventory.²² In March of 1939, the committee concluded that LIFO was in fact an established method of inventory valuation, and recommended that legislation be changed to authorize the use of LIFO in all industries that had adopted or would adopt it.²³ With little further debate in Congress, “the authorization to use the LIFO method was extended to every taxpayer with the passage of the Revenue Act of 1939.”²⁴ Congress also repealed the highly unpopular undistributed-profits tax in the same law.

As is illustrated above, LIFO has always been a heavily debated topic in the accounting world. If not for the unyielding efforts of various members of the accounting community and the

²¹ Ibid., 801.

²² Ibid.

²³ Ibid., 802.

²⁴ Ibid.

relatively few vocal opponents from outside of the federal government,²⁵ the method would likely not be allowed today. LIFO was legalized largely due to the state of the economic and regulatory environment during the 1930s. “The battle over the undistributed-profits tax united big business and weakened the Roosevelt administration, consequences which had positive implications for the LIFO issue.”²⁶ Today’s regulatory environment finds the power in the opposite position. The economic collapse of 2008 has led many people, citizens and politicians alike, to mistrust big business and the accounting industry. It is easy for opponents of LIFO to call attention to the method’s reductive effect on a company’s tax bill, and vilify executives for trying to avoid the payment of tax revenue that the nation so desperately needs. Given this environment, the opponents of LIFO are beginning to outnumber its supporters, as is explained below in the discussion of LIFO’s prominence in current events.

LIFO IN CURRENT EVENTS

The discussion of LIFO repeal has become relevant in recent years due to two major developments in governmental policy: the move towards adoption of IFRS in the US, and the growing federal budget deficit. The complete adoption of IFRS in the United States would necessitate the repeal of LIFO because LIFO is not allowed as a legal inventory accounting method under the system. Technically, the government could still allow LIFO to be used for tax purposes even if IFRS prohibited it for financial reporting. However, given the LIFO conformity rule and the concerns of LIFO being used for tax avoidance that surrounded the passing of the rule, it is unlikely that this would occur. The federal budget is also in a chronic deficit, with the

²⁵ Ibid., 796.

²⁶ Ibid., 802.

national debt approaching \$12.9 trillion. The nation desperately needs increased tax revenue to close this funding gap and prevent the debt problem from worsening. Both of these issues would be alleviated by the repeal of LIFO inventory accounting, as discussed below.

As business is increasingly conducted on an international scale, many industrial companies, financial services firms, and financial regulators are finding the task of keeping up with the accounting standards of multiple nations to be an arduous task. A great deal of time and innumerable financial resources are expended every year as companies with international operations work to report their accounting records in formats that are internationally acceptable. Companies with operations in several countries must convert their financial statements multiple times to report them in accordance with numerous sets of regulations. The most commonly encountered body of standards is International Financial Reporting Standards, known as IFRS, which are set by the International Accounting Standards Board (IASB). The IASB is a fifteen member committee based in London and “funded by contributions from major accounting firms, private financial institutions and industrial companies, central and development banks, national funding regimes, and other international and professional organizations throughout the world.”²⁷ IFRS are permitted or required by approximately 120 nations, and many more are either seriously considering its adoption or are in the process of transitioning. Still more nations are working to converge their standards with IFRS, meaning that they will work to eliminate major differences between the two bodies without fully adopting IFRS.

With so much pressure to make international accounting standards more uniform, many people believe that the adoption of IFRS in the United States is inevitable. If the United States

²⁷ "IFRS FAQs." *AICPA IFRS Resources*. AICPA. Web. <http://www.ifrs.com/ifrs_faqs.html>.

wishes to truly be competitive in a global market, its businesses must be properly equipped to do so. Having a regulatory system that differs fundamentally from that of the majority of the international business community puts American corporations at a disadvantage in the global arena. Adoption of IFRS in the United States would not only force American companies to gain the knowledge necessary to participate in the international economy, but it would also make financial reporting easier for those that already participate. Adoption would also aid investors in the understanding of international investment opportunities.

Major regulatory bodies in the United States, such as the Securities Exchange Commission (SEC) and the Financial Accounting Standards Board (FASB), have expressed strong interest in moving to IFRS based on these concerns. On November 14, 2008, the SEC issued a “Roadmap for the Potential Use of Financial Statements Prepared in Accordance with International Financial Reporting Standards by U.S. Issuers.”²⁸ This plan outlines “several milestones that, if achieved, could lead to the required use of IFRS by U.S. issuers in 2014,”²⁹ provided that the SEC believes that switching to IFRS is in the best interest of the nation at that time. In this roadmap, the SEC specifically states that a U.S. company planning to report according to IFRS would be unable to use the LIFO method of inventory accounting, and acknowledges that these companies may see a change in their taxable income due to the differences in inventory valuation.³⁰ The SEC has also made other moves towards convergence.

²⁸ United States. Securities and Exchange Commission. *Roadmap for the Potential Use of Financial Statements Prepared in Accordance with International Financial Reporting Standards by U.S. Issuers*. Release Nos. 33-8982; 34-58960. File No. S7-27-08. RIN 3235-AJ93. [Washington, D.C.] 2008. Web.

²⁹ *Ibid.*, 1.

³⁰ *Ibid.*, 38.

As of March 4, 2008,³¹ foreign firms are allowed to submit “financial statements prepared in compliance with IFRS, without reconciliation to U.S. GAAP.”³² In the statement accompanying this regulation, the SEC plainly states that convergence is “an important objective for both the protection of investors and the efficiency of capital markets.”³³ This attitude is supported by their actions. These regulations and statements from the SEC, as well as the general attitude of the accounting community, can lead one to see that convergence with IFRS is nearly certain to happen, and that LIFO will likely be repealed at that time.

The existence of LIFO is also threatened by the advent of the Obama administration. During his campaign, President Obama expressed interest in repealing LIFO as part of his budget plan for 2011, as the repeal of LIFO would generate additional tax revenue for the government. The budget deficit for 2011 is predicted to reach a level of \$1.56 trillion, the highest ever in the nation’s history. Undoubtedly, Congress is seeking ways in which this budget gap can be closed. A number of the items listed in the proposal have this goal in mind. One such item is a provision to ban the use of LIFO for tax purposes. According to the proposal, companies using LIFO would be required to revalue their beginning LIFO inventory to its FIFO value for their first taxable year beginning after December 31, 2011. The resulting onetime increase in gross income would be accounted for ratably over a ten-year period.³⁴ This provision is subject to change at

³¹ United States. Securities and Exchange Commission. *Acceptance from Foreign Private issuers of Financial Statements Prepared in Accordance with International Financial Reporting Standards without Reconciliation to U.S. GAAP*. Release Nos. 33-8879; 34-57026. International Series Release No. 1306. File No. S7-13-07. RIN 3235-AJ90. [Washington, D.C.] 2007. Web.

³² Hoffman, Michael JR, and Karen S. McKenzie. "Must LIFO Go to Make Way for IFRS?" *The Tax Adviser* March (2009): 156-61. Web. 157.

³³ *Acceptance from Foreign Private issuers of Financial Statements Prepared in Accordance with International Financial Reporting Standards without Reconciliation to U.S. GAAP*. 6.

³⁴ Willens, Robert. "Obama Budget to Spark Tax Debates." *CFO.com*. 16 Feb. 2010. Web. <<http://www.cfo.com/article.cfm/14476212>>.

the hands of Congress as it revises the President's budget proposal. However, it is likely that Congress will be in support of the increased revenue that LIFO repeal would bring, and that Congress will consider the proposal's compatibility with the imminent convergence of U.S. GAAP with IFRS.

MERITS OF LIFO

As is evident from its history and the continued debates today, LIFO inventory accounting was somewhat begrudgingly incorporated into the nation's tax law. It took many years of lobbying for supporters of LIFO to get the method passed, and it has never been universally accepted. This is also implied by the fact that no one method of inventory accounting is prescribed by law for all industries. US GAAP requires that the chosen method be the one which most accurately reflects periodic income under the company's current circumstances.³⁵ The accounting community recognizes that each company needs to select the system that works best for them, and that the company's unique situation will dictate that. Given the fact that businesses have this option, it is important to know why a company would have cause to use LIFO before discussing the method's shortcomings.

The theoretically correct reason that a company would employ LIFO as its inventory accounting system is because it believes it to be the most accurate representation of the value of its inventories upon sale. This allows the company to obtain what it claims is the best matching of the cost of goods sold expense with the revenue associated with the sale. Companies claim that the newer inventory cost better represents the current replacement cost of the inventory than

³⁵ Hoffman, Michael Jr, and Karen S. McKenzie. "Speed Bump or Barricade? LIFO Conformity and the Road to IFRS." *Strategic Finance* July (2009): 34-39. *Business Source Complete*. Web. 36.

does the older cost of inventory that would be booked under FIFO.³⁶ In particular, LIFO is said to provide the most accurate representation of economic income of all inventory accounting methods during periods of inflation because of the rising prices of inventoried goods. As prices climb, the higher cost inventory is matched to the current sales prices, deferring the gains that would normally be associated with inflation.³⁷ Proponents consider the deferral of gain to be merely a timing difference between FIFO and LIFO, much like the timing difference created when differing methods of depreciation are used. However, unlike a timing difference due to depreciation, the differences caused by using LIFO will not reverse simply with the passage of time. As will be discussed in the next section, the company must engage in a LIFO liquidation in order for these gains to be recognized.

Supporters of LIFO also claim that the deferral of these inflationary gains “facilitates a taxpayer’s reinvestment of capital in inventory.”³⁸ Showing a lower taxable income logically causes a company to owe less in taxes than it would if it had used an alternative method of inventory accounting. Though this effect is often attacked as tax avoidance, users of LIFO defend themselves by stating that they might be unable to replenish inventory from the proceeds of a sale if they had to pay the higher taxes that would be owed under the FIFO method.³⁹ If the price of the inventory item rises, the company might not have enough profit on the sale to replace it at its new price and pay the taxes on the previous sale, particularly in a smaller business with less financial leverage. These various considerations taken together constitute the majority of the

³⁶ Lessard, 784.

³⁷ Zarzar, Bob, Christine Turgeon, and Scott Rabinowitz. "The LIFO Inventory Method as It Stands Today." *Retail Merchandiser* April/May (2007): 37. *Business Source Complete*. Web.

³⁸ Ibid.

³⁹ Ibid.

advantage that a company would see in LIFO. However, the next section will illustrate why they are not valid arguments for the legal continuance of LIFO.

SHORTCOMINGS OF LIFO

Despite the previously discussed arguments for allowing the use of LIFO for inventory valuation purposes, this section will illustrate the counterarguments and show that LIFO should not be allowed. The first item to consider is the above-mentioned issue surrounding LIFO liquidations. Companies generally carry a certain minimum amount of inventory on hand to facilitate operations, and under the LIFO method, this unsold inventory is carried on the books at the oldest prices. If a company chooses not to engage in a LIFO liquidation, balance sheet inventory accounts can be vastly understated, as they will be valued based on inventory prices that are in some cases several decades old. Equally concerning is that management can take advantage of this situation and generate a nonrecurring gain by decreasing strategically its inventory levels to sell off portions of this older-priced stock. The sale will show greater than average profits, as the associated cost of goods sold will be abnormally low. Though it is required that LIFO liquidations be disclosed in the footnotes to the financial statements, they still enable managers to manipulate income. Skilled analysts will know to eliminate the nonrecurring gain associated with a LIFO liquidation from their analyses of a company's financial statements, but the average investor may not be as knowledgeable and could perceive the upswing in profits to be indicative of a new upward trend, rather than a one-time event.

Another issue inherent in LIFO is the extra time and money spent in calculating a company's LIFO reserve. The LIFO reserve is the difference between the LIFO value of a

company's inventory and the current value of the inventory, which approximates the FIFO value thereof. Analysts and investors can use this figure, which is required to be disclosed in the footnotes of a company's financial statements, to convert a LIFO company's data to what it would be under FIFO. This facilitates the comparison of LIFO companies with FIFO companies. While requiring the disclosure of this information is assuredly beneficial, calculating and using the LIFO reserve consumes additional financial and personnel resources from both the originating company and from users of financial statements. Furthermore, the same issue arises as with LIFO liquidations—the average investor may not know how to properly apply a LIFO reserve and thus be misled.

The most potent and recurrent argument against LIFO is the fact that it lowers a company's tax bill. As was discussed in the previous section, higher cost of goods sold under LIFO causes a company's profits and thus taxable income to be smaller than they would be under a different accounting system. Especially due to the current economic environment, this desirable effect of LIFO has become one of the main reasons that it is under attack. Politicians struggling to manage the massive national debt are searching for ways to increase tax revenue and see LIFO as little more than a "tax break."⁴⁰ Though the policies proposed by Congress do not explicitly state this, "the subtext that LIFO is a tax avoidance tool, not a 'real' accounting method, comes through clearly."⁴¹ This view is supported by citizens who increasingly view big business as untrustworthy and presume that every action by businesses has some criminal intent to deceive and avoid paying taxes. Furthermore, competing companies feel that those using LIFO receive an unfair advantage from this reduction in taxes simply because they use a

⁴⁰ Hoffman, "Speed Bump or Barricade? LIFO Conformity and the Road to IFRS." 38.

⁴¹ Ibid.

different method of inventory accounting. As such, there are many who want to see LIFO repealed. However, proponents of LIFO claim that the financial effects of an increase in taxes would be devastating to American businesses using LIFO. The following section will calculate just how much tax revenue is lost by the government each fiscal year and how large the financial impact of repeal would be for firms currently using LIFO.

FINANCIAL CONSEQUENCES OF LIFO REPEAL

Perhaps the most important item to consider in deciding the fate of LIFO is the financial ramifications of its repeal for both the nation's tax revenue and for the companies that would be affected. This section will quantify these financial effects and analyze which industries will be the most affected by the repeal. The data was collected from Standard & Poor's Compustat database, which was accessed through University of Pennsylvania's Wharton Research Data Services (WRDS). The majority of data analyzed was for the 2008 fiscal year, as data for the 2009 fiscal year was still incomplete as of the time of analysis. Time series data was analyzed for the fiscal years of 2004 through 2008. Industries were divided using the three-digit codes assigned by the North American Industry Classification System (NAICS). As only public companies are required to report their financial statement data, this analysis is conducted from their perspective. However, one can extrapolate the conclusions reached in this analysis to private companies, even though there is likely a greater percentage of small businesses among private companies than among public companies.

It is first important to understand which industries will be the most affected by the repeal of LIFO. In 2008, only 3.57% of all public companies used the LIFO method of inventory

accounting. However, this percentage was much higher for certain industries. The Food & Beverage Stores industry contained the most LIFO users, at 42.12% of the industry, followed by the Wholesale Trade industry (33.33%) and the Petroleum & Coal Products Manufacturing industry (30.36%). Three industries had less than one percent LIFO users. No industry had a majority of companies as LIFO users. Exhibit A contains a table listing all the industries containing LIFO-using companies, the percentage of LIFO users within each industry, as well as the total number of companies in the industry.

Within these industries, the magnitude of the average LIFO reserve varied greatly, and industries that had high percentages of LIFO users did not necessarily have a high average LIFO reserve. For example, the Health & Personal Care Stores industry had the second highest average LIFO reserve at \$534.14 million, but it was only twenty-fourth in the list of industries when ranked by percentage of LIFO users. Exhibit B shows the average LIFO reserve per industry, as well as the seventy-fifth and twenty-fifth percentiles. The relative size of the average LIFO reserve varies vastly between industries; for some it is an almost trivial amount, while for others it is several times as large as the average industry net income, total assets, and total inventory calculations. For instance, though over 30% of the Petroleum & Coal Products Manufacturing industry uses LIFO and the average LIFO reserve for the industry is over \$1.5 billion, the companies in this industry, and thus the industry overall, will actually see a relatively small change financially as a result of LIFO repeal. The average LIFO reserve in the Petroleum & Coal Products Manufacturing industry is relatively small compared to the size of the average company in the industry. Many other industries show dramatically higher percentages for these measures of scale even though the dollar value of their average LIFO reserve is in some cases

much lower. Exhibits C, D, and E provide scale for these industries by showing the industry average of each company's LIFO reserve over its net income, total assets, and total inventory, respectively. One can see that though certain industries, such as Merchant Wholesalers - Durable Goods, do not show high dollar values for their LIFO reserves (\$166.93 million), they actually have very high LIFO reserves as a percentage of assets (16.16%) and total inventory (71.43%). Thus, the size of a company's LIFO reserve is not a sufficient indicator in and of itself of the magnitude of change that the company will see on its financial statements. Companies that show their LIFO reserves to be a high percentage of these key balance sheet measures will see a greater impact on their financial statements. The impact of LIFO repeal should be considered with an eye to individual industries, as the change will affect them in very different ways.

Apart from their balance sheets, the other area where LIFO users will see changes from LIFO repeal is on their tax return. As was discussed earlier, LIFO companies generally show lower net income figures than they would under FIFO because their cost of goods sold figures are typically higher for the same products. Given this, one major impact of a LIFO repeal would be to increase the earnings figures these companies report by decreasing their cost of goods sold amounts to FIFO levels. The educated analyst would already know this number, as he or she would know how to convert certain balance sheet figures to their FIFO levels using the LIFO reserve. However, an increase in reported net income would create an increased tax bill, and thus increased tax revenue for the government. If all LIFO-using public companies had used FIFO in the 2008 fiscal year, there would have been an increase in the average LIFO company's tax bill of \$37.57 million, and the nation would have received an additional \$10.97 billion of tax

revenue. The federal budget called for a \$239 billion deficit in the 2008 fiscal year.⁴² This increased tax revenue would have reduced this deficit by 4.59%, which while not a dramatic change, would still have provided the government with much needed revenue. Over time, receiving this additional revenue each year would be very helpful for the financial health of the nation. This additional revenue figure was calculated by first determining what each company's 2008 net income would have been under FIFO, then determining the difference between the 2008 LIFO and 2008 FIFO net incomes for each company, and then multiplying this figure by each company's effective tax rate or by zero if the effective tax rate was less than zero. This calculation produced the difference between each company's LIFO and theoretical FIFO tax bill. These individual company calculations were then averaged or summed. Naturally, if a company has a low effective tax rate, either due to lower income or large amounts of tax credits and the like, the difference in net income would not have much of an effect. However, if the company pays a high effective tax rate, the impact of even a slight change in income would cause a more dramatic change in its tax bill. Exhibit F outlines the average change in yearly tax bill by industry. As would be expected due to their profitability and the size of their average LIFO reserve, the Petroleum & Coal Products Manufacturing industry will see one of the largest changes in average yearly tax bill, at over \$200 million per company. They are followed closely by the Health & Personal Care Stores industry at nearly \$187 million and the Merchant Wholesalers - Durable Goods industry at \$154 million. The effect that this change will have on these companies will be discussed below.

⁴² United States. Office of Management and Budget. Executive Office of the President of the United States. *Budget of the United States Government, Fiscal Year 2008*. Washington: U.S. G.P.O., 2007. Web. <<http://www.gpoaccess.gov/usbudget/fy08/pdf/budget/tables.pdf>>. Summary Tables, Table S-1. Budget Totals.

Companies would also face a one-time increase in taxes from the increase in the value of their inventories as a result of converting to FIFO. This one-time increase is called a § 481(a) adjustment, and companies are given an extended period in which to pay back the tax liability. “The § 481(a) adjustment period is four taxable years for a net positive § 481(a) adjustment for an accounting method change, and one taxable year for a net negative § 481(a) adjustment for an accounting method change.”⁴³ As was mentioned earlier, the Obama administration is considering lengthening this repayment period to ten years for companies moving away from LIFO.⁴⁴ If LIFO were to have been repealed in 2008, the nation would have received approximately \$10.54 billion in tax revenue spread over the course of the proscribed four- or ten-year repayment period. The amount is not a large percentage of the nation’s total budget deficit. However, it would certainly help to alleviate some of the pressure caused by lack of funding. This was calculated by adding the product of each firm’s LIFO reserve and its effective tax rate. The average LIFO company would have a tax bill of \$36.09 million to pay over the repayment period. This information is presented on a per industry basis in Exhibit G. The Petroleum & Coal Products Manufacturing industry would see a vastly larger than average tax liability from this change at nearly \$748 million. However, this average is misleadingly high due to one company, the Valero Energy Group, which has an expected tax liability of over \$14 billion. The seventy-fifth percentile of the Petroleum & Coal Products Manufacturing industry’s one-time tax bill is zero dollars, as most of the companies will actually see a loss on their adjustment. The next highest industry, Merchant Wholesalers - Durable Goods, has an average tax liability of

⁴³ United States. Internal Revenue Service. *Internal Revenue Bulletin 2008-36*. Web. <http://www.irs.gov/irb/2008-36_IRB/ar09.html#d0e2260>. Revenue Proclamation 2008-52, Section 5.04

⁴⁴ Willens, 2.

over \$700 million less at almost \$48 million, and the highest seventy-fifth percentile measure at \$22.24 million. Next is the Food Manufacturing industry at \$15.38 million on average and \$6.63 million at the seventy-fifth percentile, and the Chemical Manufacturing industry at \$13.63 million on average and \$1.01 million at the seventy-fifth percentile. Other industries with high seventy-fifth percentile measures include the Health & Personal Care stores industry at \$16.76 million, the Crop Production industry at \$14.73 million, and the Unclassified Establishments - Industrial Conglomerates industry at \$14.66 million. Other than these few high LIFO reserve industries, the majority of the companies will incur a tax liability of under \$10 million, and as can be seen from Exhibit G, several will actually see a loss on the conversion to FIFO rather than a gain.

Of course, this change in tax liabilities must be considered not only in terms of the raw revenue that they will generate but also in terms of the impacted companies' ability to pay. Exhibit H shows the yearly increase in tax liability as a percentage of operating cash flow, calculated on an individual company basis and averaged by industry. Most of the industries should find that this is really a very manageable amount. The vast majority of industries show the average change in yearly tax liability to be less than one percent of the average operating cash flow. In fact, the Merchant Wholesalers - Durable Goods industry has the highest seventy-fifth percentile of yearly tax liability as a percentage of operating cash flow at only 8.99%. However, the industry's average is 194.42%, which suggests that a small number of individual companies will face a higher percentage. Thus, for all but a few companies, this additional yearly tax liability should not be a burden at all. The few companies with high percentages will

need to conduct some financial planning and perhaps make some changes in spending habits in order to accommodate these additional payments.

The tax liability generated by the § 481(a) adjustment will be somewhat more problematic for these companies. Exhibit I shows the one-time tax bill for conversion from LIFO to FIFO as a percentage of operating cash flow. Again, the Merchant Wholesalers - Durable Goods industry shows the highest average at 528.34%, and the second highest seventy-fifth percentile at 44.43%. The Printing & Related Support Activities industry also has a high average at 283.30%. Other industries such as Furniture & Home Furnishings Stores (25.24%), Textile Product Mills (19.31%), and Wholesale Trade (19.08%) will also see a large impact from this tax. The majority of other industries will see an average impact of less than 10%. As with the additional yearly tax liability, certain individual companies may see a considerably larger impact. However, it must be remembered that these companies will have at least four years over which to repay this liability, and the federal budget proposal that mentions LIFO repeal suggests an even longer ten-year tax payment period for companies that are forced to switch to FIFO by this change in law.⁴⁵

One can see from Exhibits H and I that the majority of companies should face no real financial danger from LIFO repeal. However, certain industries may be negatively impacted due to high LIFO reserves relative to the size of the companies in the industry. These industries, and certain companies in other industries with abnormally high individual tax liabilities, would suffer a real hardship as a result of the changes. As such, the government should allow these companies the option to pay their § 481(a) adjustment tax over a longer period of time, provided

⁴⁵ Willens, 2.

that they can demonstrate that their financial health would be threatened by the repayment of the § 481(a) adjustment over the usual proscribed period, whether that is set at four or at ten years. However, the majority of companies would not need this special treatment. Furthermore, even fewer companies would be negatively affected by the additional yearly taxes owed due to increased net income. Almost all industries show this additional liability as less than one percent of operating cash flow. Yet as with the § 481(a) adjustment, certain companies and certain industries could find themselves heavily burdened by this change. The government should work out a method by which those companies with real hardship could reduce their tax liability to a manageable level on a temporary basis until they can make the necessary changes to cash management practices.

Firms with high potential tax liabilities due to § 481(a) adjustments could begin to prepare themselves now for the eventual repeal of LIFO by decreasing the value of their LIFO reserve and working on their operating cash flow to free up the funds needed to pay an increased amount of tax. However, despite the increasing discussion of LIFO repeal, it appears that firms are not preparing for this switch by decreasing the values of their LIFO reserves. Exhibit J contains a graph showing the change in average LIFO reserve values as a percentage of total assets over the last five fiscal years. This percentage has been steadily increasing. From 2006 to 2007, approximately 26% of all LIFO-using companies decreased the size of their LIFO reserve. However, from 2007 to 2008, when LIFO repeal was becoming even more likely, only 23% of companies decreased their LIFO reserve. On the whole, companies thus appear to be somewhat unprepared for a repeal of LIFO. Though changes in LIFO reserves are affected by inventory prices, which are outside of the companies' control, the reserve is also affected by changes in

inventory quantity, which are very much within the companies' control. Thus though part of the trend illustrated above may be attributed to changes in prices, the companies involved are still able to influence the value of their LIFO reserves. When this is considered in conjunction with the tax liability calculations discussed earlier, one can see that the government may need to work closely with some of the companies that will be facing drastic changes in their balance sheets and in their tax bills to ensure that they are able to pay the taxes without damaging their financial stability. These cases will be the exception, however, rather than the rule, as the tax data analyzed above illustrates. The majority of companies will be able to afford the change to their inventories without incurring financial troubles.

CONCLUSION

In conclusion, the repeal of LIFO will constitute a well-founded shift in accounting policy in the United States. The economic and regulatory environments have changed since the inception of LIFO years ago, and many of the arguments that helped it get passed are no longer valid. The economic collapse of 2008 has led the general public to be highly distrusting of the financial reporting practices of corporate America, and to the average citizen LIFO is no more than a tax avoidance ploy. Furthermore, the nation is in desperate need of additional revenue to fund not only existing projects but also new initiatives under the Obama administration. An increasingly global economy is pushing the nation toward the adoption of IFRS and doing so will mean the end of LIFO. President Obama's 2011 budget has already called for the repeal of LIFO, and it is likely that this proposal will come to fruition given this environment.

Though LIFO may theoretically reflect better matching of sale revenue with inventory acquisition expenses to some extent, it does not reflect reality. Users and preparers of financial statements are required to expend additional time and effort to calculate a company's LIFO reserve and convert important measures of financial health back and forth between LIFO and FIFO values. Most importantly, LIFO companies receive an unfair advantage from their reduced tax liability. Educated users know that LIFO firms are not actually less profitable than FIFO firms, and that they merely benefit from the increased cost of goods sold calculations available to them under LIFO. The only place where LIFO firms see a real difference is in their tax liability. As was illustrated, the nation missed out on approximately \$11 billion of tax revenue in 2008 because of companies using LIFO from public companies alone. Further revenue of approximately \$10.5 billion would also be gained upon the repeal of LIFO from the gain on the increase in value of inventory accounts. These revenue estimates are also likely quite low, as they only consider public companies. The companies benefiting from LIFO have no inherently different business practice that allows them to avoid these taxes aside from their election to use a particular method of inventory accounting.

One of the most common arguments made against LIFO repeal is that the tax liability associated with switching to another method of inventory accounting would cause major financial difficulties and in some cases bankruptcy for the affected firms. However, the analysis conducted in this paper demonstrates that the majority of LIFO-using firms would not face financial hardships as a result of LIFO repeal. Certain industries, such as the Petroleum & Coal Products Manufacturing industry, the Merchant Wholesalers - Durable Goods industry, the Primary Metal and Fabricated Metal Product Manufacturing industries, the Textile Product Mills

industry, and the Printing & Related Support Activities industry could see a significant portion of their operating cash flow tied up in the payment of the tax owed as a result of conversion to FIFO or another non-LIFO method of inventory accounting. The average change in yearly tax bill will have a smaller impact. Only the Merchant Wholesalers - Durable Goods, Petroleum & Coal Products Manufacturing, and Primary Metal Manufacturing industries will see an average change in yearly tax liability of greater than 5% of their operating cash flow. The vast majority of industries will see this change represent less than 1% of operating cash flow. Despite a relative lack of preparedness for the change as illustrated by a growing average LIFO reserve and a decreasing number of firms that are shrinking their LIFO reserves, the repeal of LIFO should not cause major financial difficulties. For those few firms or industries that may face a difficult cash flow situation as a result of their increased tax liability, the government can offer an extended option for the repayment of the tax owed upon switching away from LIFO and perhaps also a graduated option for increasing their yearly income tax to FIFO levels.

Given the analysis herein, it is recommended that the LIFO method of inventory accounting be repealed. Doing so will increase tax revenue and put America's corporations in a competitive position for participation in the global economy by helping them to be more compatible with IFRS. LIFO repeal will not place an inequitable tax burden on the affected companies. Furthermore, if a small percentage of companies demonstrate that they will face a real hardship in paying the additional tax, it would not be complex for the government to collaborate with them to make LIFO repeal work. Companies that are using LIFO receive an unfair reduction in the taxes from a policy that is no longer a justifiable accounting method, and it is time that this option was removed.

EXHIBIT A - LIFO USAGE BY INDUSTRY

Industry Name	Companies using LIFO	Companies in Industry
Food and Beverage Stores	42.12%	19
Wholesale Trade	33.33%	3
Petroleum and Coal Products Manufacturing	30.36%	56
Paper Manufacturing	29.03%	62
Primary Metal Manufacturing	25.37%	67
Fabricated Metal Product Manufacturing	25.00%	72
Furniture and Home Furnishings Stores	25.00%	4
Textile Product Mills	25.00%	4
Plastics and Rubber Products Manufacturing	24.00%	50
Printing and Related Support Activities	21.05%	19
Gasoline Stations	20.00%	5
Machinery Manufacturing	19.89%	186
Furniture and Related Product Manufacturing	18.18%	22
Nonmetallic Mineral Product Manufacturing	17.86%	28
Transportation Equipment Manufacturing	17.21%	122
Textile Mills	16.67%	6
Wood Product Manufacturing	15.38%	26
Electronics and Appliance Stores	14.29%	7
Electrical Equipment, Appliance, and Component Manufacturing	13.27%	98
Crop Production	11.76%	17
Merchant Wholesalers, Nondurable Goods	11.43%	70

Industry Name	Companies using LIFO	Companies in Industry
Beverage and Tobacco Product Manufacturing	11.36%	44
General Merchandise Stores	11.11%	9
Health and Personal Care Stores	10.53%	19
Motor Vehicle and Parts Dealers	10.53%	19
Leather and Allied Product Manufacturing	10.00%	20
Miscellaneous Store Retailers	10.00%	10
Clothing and Clothing Accessories Stores	9.09%	11
Merchant Wholesalers, Durable Goods	8.74%	103
Food Manufacturing	7.61%	92
Miscellaneous Manufacturing	6.25%	144
Chemical Manufacturing	5.66%	654
Pipeline Transportation	4.65%	43
Rental and Leasing Services	2.63%	38
Unclassified Establishments	2.11%	142
Support Activities for Mining	1.49%	67
Publishing Industries (except Internet)	1.44%	277
Computer and Electronic Product Manufacturing	1.03%	682
Mining (except Oil and Gas)	0.68%	440
Utilities	0.34%	297
Oil and Gas Extraction	0.29%	345

EXHIBIT B - AVERAGE LIFO RESERVE SIZE

Column 2: Average LIFO Reserve, in millions

Column 3: 75th Percentile of LIFO Reserve, in millions

Column 4: 25th Percentile of LIFO Reserve, in millions

Industry	2	3	4
Petroleum and Coal Products Manufacturing	\$1,574.41	\$994.00	\$58.53
Health and Personal Care Stores	\$534.14	\$800.57	\$267.71
Unclassified Establishments	\$451.22	\$656.50	\$323.84
Primary Metal Manufacturing	\$317.77	\$562.30	\$20.50
Wholesale Trade	\$317.00	\$317.00	\$317.00
Beverage and Tobacco Product Manufacturing	\$204.99	\$155.00	\$50.00
Chemical Manufacturing	\$202.12	\$140.00	\$29.40
Transportation Equipment Manufacturing	\$172.57	\$157.90	\$14.00
Merchant Wholesalers, Durable Goods	\$166.93	\$167.20	\$79.20
Merchant Wholesalers, Nondurable Goods	\$164.65	\$188.00	\$25.62
Food Manufacturing	\$162.68	\$144.89	\$15.41
Machinery Manufacturing	\$161.51	\$75.80	\$14.52
Crop Production	\$117.50	\$156.25	\$78.75
Electronics and Appliance Stores	\$84.70	\$84.70	\$84.70
Mining (except Oil and Gas)	\$75.07	\$105.25	\$49.61
Oil and Gas Extraction	\$71.00	\$71.00	\$71.00
Paper Manufacturing	\$69.09	\$89.21	\$12.11
Miscellaneous Store Retailers	\$68.30	\$68.30	\$68.30
Food and Beverage Stores	\$67.65	\$74.31	\$21.87

Industry	2	3	4
Electrical Equipment, Appliance, and Component Manufacturing	\$54.72	\$86.30	\$7.00
Fabricated Metal Product Manufacturing	\$54.60	\$71.54	\$7.68
Wood Product Manufacturing	\$51.45	\$63.23	\$9.23
Utilities	\$51.00	\$51.00	\$51.00
Furniture and Related Product Manufacturing	\$41.42	\$52.58	\$6.37
Plastics and Rubber Products Manufacturing	\$40.16	\$48.88	\$10.03
Printing and Related Support Activities	\$34.06	\$49.36	\$4.66
General Merchandise Stores	\$32.32	\$32.32	\$32.32
Support Activities for Mining	\$31.00	\$31.00	\$31.00
Gasoline Stations	\$29.88	\$29.88	\$29.88
Pipeline Transportation	\$22.10	\$33.40	\$10.80
Furniture and Home Furnishings Stores	\$17.49	\$17.49	\$17.49
Computer and Electronic Product Manufacturing	\$14.85	\$25.25	\$2.08
Textile Mills	\$13.75	\$13.75	\$13.75
Nonmetallic Mineral Product Manufacturing	\$13.58	\$18.30	\$6.41
Rental and Leasing Services	\$12.67	\$12.67	\$12.67
Clothing and Clothing Accessories Stores	\$12.20	\$12.20	\$12.20
Textile Product Mills	\$11.65	\$11.65	\$11.65
Miscellaneous Manufacturing	\$11.55	\$13.10	\$3.50
Publishing Industries (except Internet)	\$6.70	\$9.27	\$4.73
Leather and Allied Product Manufacturing	-\$7.57	\$2.14	-\$17.29
Motor Vehicle and Parts Dealers	-\$10.41	\$25.00	-\$45.81

EXHIBIT C - LIFO RESERVE AS A PERCENTAGE OF NET INCOME

Column 2: Average of LIFO Reserve as a Percentage of Net Income

Column 3: 75th Percentile of LIFO Reserve as a Percentage of Net Income

Column 4: 25th Percentile of LIFO Reserve as a Percentage of Net Income

Industry	2	3	4
Primary Metal Manufacturing	1574.83%	222.14%	47.87%
Printing and Related Support Activities	497.48%	497.48%	497.48%
Wood Product Manufacturing	212.20%	307.19%	117.21%
Merchant Wholesalers, Durable Goods	162.84%	149.20%	82.60%
Miscellaneous Manufacturing	131.60%	64.96%	2.85%
Transportation Equipment Manufacturing	122.32%	81.38%	6.03%
Clothing and Clothing Accessories Stores	112.95%	112.95%	112.95%
Merchant Wholesalers, Nondurable Goods	110.56%	161.28%	78.19%
Gasoline Stations	94.00%	94.00%	94.00%
Fabricated Metal Product Manufacturing	93.03%	137.89%	13.81%
Furniture and Related Product Manufacturing	86.91%	99.92%	69.39%
Electronics and Appliance Stores	86.06%	86.06%	86.06%
Miscellaneous Store Retailers	83.36%	83.36%	83.36%
Paper Manufacturing	78.05%	80.53%	18.77%
Chemical Manufacturing	77.44%	104.88%	8.09%
Machinery Manufacturing	68.67%	89.49%	12.98%
Wholesale Trade	66.69%	66.69%	66.69%
Food and Beverage Stores	64.32%	79.47%	24.49%
Plastics and Rubber Products Manufacturing	55.78%	45.31%	6.42%

Industry	2	3	4
Petroleum and Coal Products Manufacturing	55.05%	61.92%	22.02%
Health and Personal Care Stores	49.47%	49.47%	49.47%
Electrical Equipment, Appliance, and Component Manufacturing	44.90%	51.41%	22.64%
Food Manufacturing	38.26%	44.06%	33.88%
Nonmetallic Mineral Product Manufacturing	17.70%	20.25%	13.04%
Computer and Electronic Product Manufacturing	16.31%	24.64%	9.81%
Rental and Leasing Services	15.43%	15.43%	15.43%
Unclassified Establishments	14.63%	19.92%	8.10%
Beverage and Tobacco Product Manufacturing	13.29%	15.02%	11.94%
Pipeline Transportation	10.40%	15.62%	5.18%
Mining (except Oil and Gas)	9.85%	13.12%	6.59%
Crop Production	9.63%	9.63%	9.63%
Publishing Industries (except Internet)	6.71%	6.71%	6.71%
Leather and Allied Product Manufacturing	4.46%	8.42%	0.51%
Utilities	2.76%	2.76%	2.76%
General Merchandise Stores	2.52%	2.52%	2.52%
Support Activities for Mining	2.02%	2.02%	2.02%
Oil and Gas Extraction	1.04%	1.04%	1.04%
Motor Vehicle and Parts Dealers	-0.84%	15.80%	-17.48%

EXHIBIT D - LIFO RESERVE AS A PERCENTAGE OF TOTAL ASSETS

Column 2: Average of LIFO Reserve as a Percentage of Total Assets

Column 3: 75th Percentile of LIFO Reserve as a Percentage of Total Assets

Column 4: 25th Percentile of LIFO Reserve as a Percentage of Total Assets

Industry	2	3	4
Merchant Wholesalers, Durable Goods	16.16%	18.79%	7.46%
Wholesale Trade	9.02%	9.02%	9.02%
Primary Metal Manufacturing	7.24%	11.85%	2.85%
Miscellaneous Store Retailers	6.35%	6.35%	6.35%
Health and Personal Care Stores	5.84%	6.37%	5.30%
Fabricated Metal Product Manufacturing	5.56%	6.55%	1.65%
Merchant Wholesalers, Nondurable Goods	4.91%	7.86%	2.45%
Chemical Manufacturing	4.89%	5.38%	0.60%
Furniture and Home Furnishings Stores	4.81%	4.81%	4.81%
Petroleum and Coal Products Manufacturing	4.72%	5.45%	1.76%
Textile Product Mills	4.61%	4.61%	4.61%
Electronics and Appliance Stores	4.50%	4.50%	4.50%
Machinery Manufacturing	3.53%	5.29%	0.66%
Food and Beverage Stores	3.30%	4.79%	1.29%
Plastics and Rubber Products Manufacturing	3.22%	5.07%	0.58%
Wood Product Manufacturing	3.04%	3.40%	0.75%
Printing and Related Support Activities	2.97%	3.90%	0.81%
Furniture and Related Product Manufacturing	2.82%	3.28%	2.24%
Food Manufacturing	2.74%	2.95%	1.43%

Industry	2	3	4
Nonmetallic Mineral Product Manufacturing	2.43%	2.23%	1.09%
Beverage and Tobacco Product Manufacturing	2.31%	2.57%	0.62%
Transportation Equipment Manufacturing	2.23%	1.83%	0.41%
Miscellaneous Manufacturing	1.90%	2.71%	0.20%
Paper Manufacturing	1.84%	1.93%	1.14%
Textile Mills	1.81%	1.81%	1.81%
Computer and Electronic Product Manufacturing	1.64%	2.12%	0.89%
Crop Production	1.55%	1.78%	1.32%
Gasoline Stations	1.38%	1.38%	1.38%
Mining (except Oil and Gas)	1.22%	1.73%	0.81%
Pipeline Transportation	0.96%	1.45%	0.48%
Clothing and Clothing Accessories Stores	0.86%	0.86%	0.86%
Unclassified Establishments	0.69%	0.99%	0.16%
Publishing Industries (except Internet)	0.55%	0.63%	0.29%
Rental and Leasing Services	0.42%	0.42%	0.42%
Leather and Allied Product Manufacturing	0.30%	1.04%	-0.44%
Support Activities for Mining	0.22%	0.22%	0.22%
Oil and Gas Extraction	0.17%	0.17%	0.17%
General Merchandise Stores	0.16%	0.16%	0.16%
Utilities	0.12%	0.12%	0.12%
Electrical Equipment, Appliance, and Component Manufacturing	0.00%	2.68%	0.67%
Motor Vehicle and Parts Dealers	-0.65%	0.40%	-1.69%

EXHIBIT E - LIFO RESERVE AS A PERCENTAGE OF TOTAL INVENTORY

Column 2: Average of LIFO Reserve as a Percentage of Total Inventory

Column 3: 75th Percentile of LIFO Reserve as a Percentage of Total Inventory

Column 4: 25th Percentile of LIFO Reserve as a Percentage of Total Inventory

Inventory	2	3	4
Publishing Industries (except Internet)	84.55%	109.46%	35.33%
Merchant Wholesalers, Durable Goods	71.43%	55.57%	20.71%
Petroleum and Coal Products Manufacturing	58.65%	85.87%	21.04%
Nonmetallic Mineral Product Manufacturing	52.58%	27.35%	8.27%
Miscellaneous Store Retailers	49.58%	49.58%	49.58%
Fabricated Metal Product Manufacturing	40.91%	28.34%	14.57%
Printing and Related Support Activities	36.47%	50.63%	12.89%
Electronics and Appliance Stores	33.76%	33.76%	33.76%
Primary Metal Manufacturing	30.76%	40.15%	10.60%
Beverage and Tobacco Product Manufacturing	30.60%	60.78%	8.59%
Chemical Manufacturing	30.48%	30.38%	6.29%
Wood Product Manufacturing	22.27%	34.83%	9.65%
Merchant Wholesalers, Nondurable Goods	21.98%	30.50%	9.70%
Food Manufacturing	20.87%	22.81%	11.93%
Health and Personal Care Stores	19.97%	21.28%	18.65%
Mining (except Oil and Gas)	19.78%	28.82%	12.37%
Furniture and Related Product Manufacturing	19.68%	27.50%	13.47%
Plastics and Rubber Products Manufacturing	19.42%	31.94%	4.23%
Wholesale Trade	18.41%	18.41%	18.41%

Inventory	2	3	4
Machinery Manufacturing	17.65%	25.41%	6.55%
Food and Beverage Stores	17.19%	23.29%	8.44%
Miscellaneous Manufacturing	16.72%	26.95%	7.08%
Textile Mills	15.49%	15.49%	15.49%
Pipeline Transportation	14.44%	21.94%	6.93%
Paper Manufacturing	13.24%	17.36%	8.25%
Crop Production	13.04%	15.86%	10.23%
Transportation Equipment Manufacturing	12.71%	14.91%	3.21%
Furniture and Home Furnishings Stores	12.45%	12.45%	12.45%
General Merchandise Stores	11.32%	11.32%	11.32%
Support Activities for Mining	9.01%	9.01%	9.01%
Computer and Electronic Product Manufacturing	8.84%	12.01%	5.49%
Electrical Equipment, Appliance, and Component Manufacturing	8.61%	19.26%	5.37%
Rental and Leasing Services	8.09%	8.09%	8.09%
Oil and Gas Extraction	7.41%	7.41%	7.41%
Unclassified Establishments	6.58%	7.99%	5.88%
Textile Product Mills	6.02%	6.02%	6.02%
Motor Vehicle and Parts Dealers	5.93%	11.39%	0.46%
Utilities	4.08%	4.08%	4.08%
Gasoline Stations	1.56%	1.56%	1.56%
Clothing and Clothing Accessories Stores	0.64%	0.64%	0.64%
Leather and Allied Product Manufacturing	-0.80%	2.70%	-4.31%

EXHIBIT F - CHANGE IN YEARLY INCOME TAX BILL FROM LIFO TO FIFO

Column 2: Average of Change in Yearly Income Tax Bill, in millions

Column 3: 75th Percentile of Change in Yearly Income Tax Bill, in millions

Column 4: 25th Percentile of Change in Yearly Income Tax Bill, in millions

Industry	2	3	4
Petroleum and Coal Products Manufacturing	\$200.56	\$331.71	\$1.06
Health and Personal Care Stores	\$186.80	\$280.20	\$93.40
Merchant Wholesalers, Durable Goods	\$154.05	\$110.42	\$19.03
Printing and Related Support Activities	\$113.99	\$122.49	\$0.53
Wholesale Trade	\$101.15	\$101.15	\$101.15
Primary Metal Manufacturing	\$62.88	\$33.77	\$0.00
Beverage and Tobacco Product Manufacturing	\$59.13	\$43.02	\$2.16
Mining (except Oil and Gas)	\$43.04	\$63.67	\$10.28
Food Manufacturing	\$34.76	\$37.65	\$1.66
Electronics and Appliance Stores	\$27.93	\$27.93	\$27.93
Chemical Manufacturing	\$26.69	\$11.80	\$0.00
Unclassified Establishments	\$24.44	\$36.67	\$0.00
Miscellaneous Store Retailers	\$23.80	\$23.80	\$23.80
Machinery Manufacturing	\$23.32	\$10.00	\$0.17
Crop Production	\$17.56	\$26.34	\$8.78
Food and Beverage Stores	\$17.22	\$16.17	\$3.44
Transportation Equipment Manufacturing	\$17.21	\$14.62	\$1.23
Merchant Wholesalers, Nondurable Goods	\$10.94	\$13.42	\$1.94
Fabricated Metal Product Manufacturing	\$10.49	\$9.97	\$0.83

Industry	2	3	4
Furniture and Home Furnishings Stores	\$10.27	\$10.27	\$10.27
Oil and Gas Extraction	\$9.55	\$9.55	\$9.55
Clothing and Clothing Accessories Stores	\$7.36	\$7.36	\$7.36
Wood Product Manufacturing	\$7.09	\$7.09	\$0.00
General Merchandise Stores	\$6.60	\$6.60	\$6.60
Furniture and Related Product Manufacturing	\$6.49	\$6.81	\$0.18
Electrical Equipment, Appliance, and Component Manufacturing	\$6.13	\$9.61	\$0.00
Support Activities for Mining	\$5.50	\$5.50	\$5.50
Plastics and Rubber Products Manufacturing	\$3.53	\$1.98	\$0.11
Paper Manufacturing	\$3.16	\$3.59	\$0.00
Gasoline Stations	\$3.11	\$3.11	\$3.11
Rental and Leasing Services	\$3.01	\$3.01	\$3.01
Miscellaneous Manufacturing	\$1.78	\$2.14	\$0.79
Computer and Electronic Product Manufacturing	\$1.76	\$3.63	\$0.04
Textile Product Mills	\$1.62	\$1.62	\$1.62
Utilities	\$1.13	\$1.13	\$1.13
Publishing Industries (except Internet)	\$0.57	\$0.57	\$0.00
Nonmetallic Mineral Product Manufacturing	\$0.17	\$0.18	\$0.00
Textile Mills	\$0.00	\$0.00	\$0.00
Pipeline Transportation	-\$0.03	-\$0.01	-\$0.04
Leather and Allied Product Manufacturing	-\$2.46	\$0.09	-\$5.01
Motor Vehicle and Parts Dealers	-\$4.72	\$6.68	-\$16.11

EXHIBIT G - ONE-TIME TAX BILL FOR CONVERSION FROM LIFO TO FIFO

Column 2: Average of Tax Bill for Conversion, in millions

Column 3: 75th Percentile of Tax Bill for Conversion, in millions

Column 4: 25th Percentile of Tax Bill for Conversion, in millions

Industry	2	3	4
Petroleum and Coal Products Manufacturing	\$747.85	\$0.00	-\$43.44
Merchant Wholesalers, Durable Goods	\$47.78	\$22.24	\$2.29
Food Manufacturing	\$15.38	\$6.63	\$0.28
Chemical Manufacturing	\$13.63	\$1.01	\$0.00
Health and Personal Care Stores	\$11.17	\$16.76	\$5.59
Crop Production	\$9.82	\$14.73	\$4.91
Unclassified Establishments	\$9.77	\$14.66	\$0.00
Miscellaneous Store Retailers	\$9.72	\$9.72	\$9.72
Beverage and Tobacco Product Manufacturing	\$8.86	\$12.74	\$0.00
Primary Metal Manufacturing	\$7.06	\$0.94	\$0.00
Wholesale Trade	\$6.37	\$6.37	\$6.37
Electronics and Appliance Stores	\$5.37	\$5.37	\$5.37
General Merchandise Stores	\$5.25	\$5.25	\$5.25
Food and Beverage Stores	\$3.40	\$3.23	\$0.15
Mining (except Oil and Gas)	\$3.14	\$4.70	\$2.27
Machinery Manufacturing	\$2.69	\$0.78	\$0.02
Furniture and Related Product Manufacturing	\$2.49	\$2.51	-\$0.02
Merchant Wholesalers, Nondurable Goods	\$2.07	\$2.83	\$1.23
Motor Vehicle and Parts Dealers	\$2.02	\$2.41	\$1.62

Industry	2	3	4
Electrical Equipment, Appliance, and Component Manufacturing	\$1.21	\$1.48	\$0.00
Gasoline Stations	\$1.14	\$1.14	\$1.14
Fabricated Metal Product Manufacturing	\$1.08	\$0.80	\$0.00
Support Activities for Mining	\$0.88	\$0.88	\$0.88
Plastics and Rubber Products Manufacturing	\$0.87	\$0.28	\$0.00
Transportation Equipment Manufacturing	\$0.78	\$0.96	-\$0.01
Paper Manufacturing	\$0.46	\$0.25	\$0.00
Rental and Leasing Services	\$0.32	\$0.32	\$0.32
Furniture and Home Furnishings Stores	\$0.24	\$0.24	\$0.24
Publishing Industries (except Internet)	\$0.13	\$0.13	\$0.00
Textile Product Mills	\$0.08	\$0.08	\$0.08
Computer and Electronic Product Manufacturing	\$0.03	\$0.08	\$0.00
Textile Mills	\$0.00	\$0.00	\$0.00
Pipeline Transportation	-\$0.02	-\$0.01	-\$0.04
Nonmetallic Mineral Product Manufacturing	-\$0.03	\$0.00	\$0.00
Miscellaneous Manufacturing	-\$0.19	\$0.26	\$0.00
Utilities	-\$0.48	-\$0.48	-\$0.48
Leather and Allied Product Manufacturing	-\$2.15	-\$0.82	-\$3.47
Wood Product Manufacturing	-\$3.03	\$0.00	-\$3.03
Oil and Gas Extraction	-\$3.61	-\$3.61	-\$3.61
Clothing and Clothing Accessories Stores	-\$6.06	-\$6.06	-\$6.06
Printing and Related Support Activities	-\$814.07	\$1.04	-\$815.10

EXHIBIT H - CHANGE IN YEARLY INCOME TAX BILL FROM LIFO TO FIFO AS A PERCENTAGE OF OPERATING CASH FLOW

Column 2: Average of Change in Yearly Income Tax Bill as a Percentage of Operating Cash Flow

Column 3: 75th Percentile of Change in Yearly Income Tax Bill as a Percentage of Operating Cash Flow

Column 4: 25th Percentile of Change in Yearly Income Tax Bill as a Percentage of Operating Cash Flow

Industry	2	3	4
Merchant Wholesalers, Durable Goods	194.42%	8.99%	1.74%
Petroleum and Coal Products Manufacturing	20.00%	0.00%	-13.23%
Primary Metal Manufacturing	6.54%	1.28%	0.00%
Miscellaneous Store Retailers	4.47%	4.47%	4.47%
Chemical Manufacturing	2.11%	1.86%	0.00%
Merchant Wholesalers, Nondurable Goods	1.48%	2.53%	0.31%
Wholesale Trade	1.20%	1.20%	1.20%
Beverage and Tobacco Product Manufacturing	0.93%	0.95%	0.00%
Textile Product Mills	0.91%	0.91%	0.91%
Fabricated Metal Product Manufacturing	0.88%	0.99%	0.00%
Electrical Equipment, Appliance, and Component Manufacturing	0.80%	0.64%	0.00%
Machinery Manufacturing	0.74%	0.77%	0.01%
Gasoline Stations	0.72%	0.72%	0.72%
Food and Beverage Stores	0.68%	0.84%	0.31%
Furniture and Home Furnishings Stores	0.59%	0.59%	0.59%
Mining (except Oil and Gas)	0.55%	0.83%	0.27%

Industry	2	3	4
Motor Vehicle and Parts Dealers	0.50%	0.54%	0.45%
Food Manufacturing	0.40%	1.31%	0.12%
Furniture and Related Product Manufacturing	0.37%	0.58%	-0.20%
Health and Personal Care Stores	0.37%	0.55%	0.18%
Crop Production	0.35%	0.53%	0.18%
General Merchandise Stores	0.24%	0.24%	0.24%
Wood Product Manufacturing	0.23%	0.23%	0.00%
Rental and Leasing Services	0.17%	0.17%	0.17%
Unclassified Establishments	0.09%	0.13%	0.00%
Publishing Industries (except Internet)	0.05%	0.05%	0.00%
Support Activities for Mining	0.03%	0.03%	0.03%
Miscellaneous Manufacturing	0.01%	0.18%	0.00%
Leather and Allied Product Manufacturing	0.01%	0.27%	-0.26%
Textile Mills	0.00%	0.00%	0.00%
Pipeline Transportation	-0.01%	0.00%	-0.01%
Utilities	-0.02%	-0.02%	-0.02%
Computer and Electronic Product Manufacturing	-0.03%	0.05%	-0.09%
Oil and Gas Extraction	-0.03%	-0.03%	-0.03%
Paper Manufacturing	-0.08%	0.08%	0.00%
Nonmetallic Mineral Product Manufacturing	-0.20%	0.00%	-0.17%
Transportation Equipment Manufacturing	-0.23%	0.79%	-0.12%

Industry	2	3	4
Plastics and Rubber Products Manufacturing	-0.36%	0.07%	-0.12%
Electronics and Appliance Stores	-4.15%	-4.15%	-4.15%
Clothing and Clothing Accessories Stores	-5.23%	-5.23%	-5.23%
Printing and Related Support Activities	-2103.98%	0.10%	-2104.08%

**EXHIBIT I - ONE-TIME TAX BILL FOR CONVERSION FROM LIFO TO FIFO AS A
PERCENTAGE OF OPERATING CASH FLOW**

Column 2: Average of Tax Bill for Conversion as a Percentage of Operating Cash Flow

Column 3: 75th Percentile of Tax Bill for Conversion as a Percentage of Operating Cash Flow

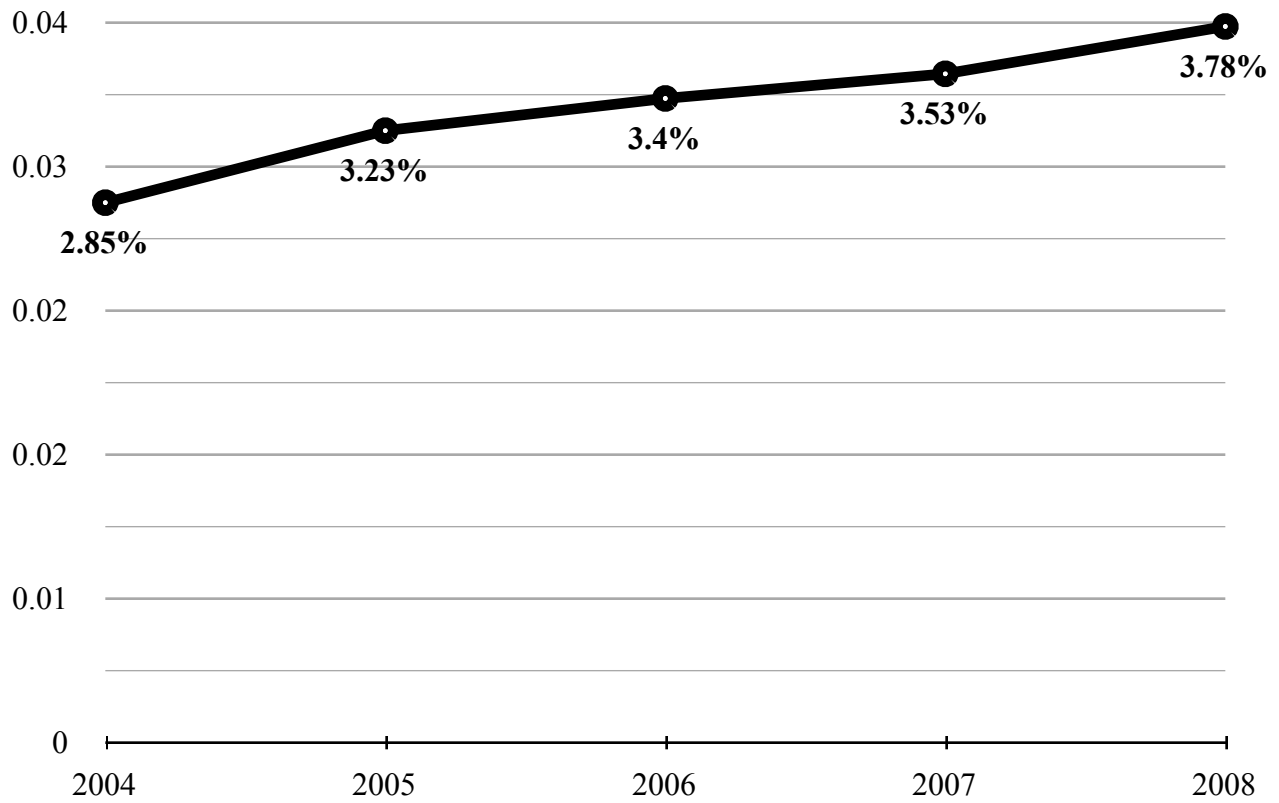
Column 4: 25th Percentile of Tax Bill for Conversion as a Percentage of Operating Cash Flow

Industry	2	3	4
Merchant Wholesalers, Durable Goods	528.34%	44.43%	26.25%
Printing and Related Support Activities	283.30%	283.87%	0.85%
Primary Metal Manufacturing	42.22%	8.49%	0.00%
Furniture and Home Furnishings Stores	25.24%	25.24%	25.24%
Textile Product Mills	19.31%	19.31%	19.31%
Wholesale Trade	19.08%	19.08%	19.08%
Fabricated Metal Product Manufacturing	14.02%	13.17%	1.41%
Petroleum and Coal Products Manufacturing	12.33%	3.07%	0.00%
Miscellaneous Store Retailers	10.94%	10.94%	10.94%
Merchant Wholesalers, Nondurable Goods	9.46%	16.93%	1.06%
Mining (except Oil and Gas)	9.11%	13.57%	1.19%
Machinery Manufacturing	8.54%	7.58%	0.20%
Chemical Manufacturing	7.26%	12.12%	0.00%
Clothing and Clothing Accessories Stores	6.36%	6.36%	6.36%
Health and Personal Care Stores	6.15%	9.22%	3.07%
Miscellaneous Manufacturing	5.68%	4.73%	0.08%
Food and Beverage Stores	5.04%	6.64%	2.47%
Electrical Equipment, Appliance, and Component Manufacturing	4.04%	4.59%	0.00%
Furniture and Related Product Manufacturing	3.14%	6.46%	-0.45%

Industry	2	3	4
Food Manufacturing	2.81%	5.95%	0.81%
Beverage and Tobacco Product Manufacturing	2.76%	4.39%	2.37%
Computer and Electronic Product Manufacturing	2.11%	2.75%	0.08%
Gasoline Stations	1.98%	1.98%	1.98%
Rental and Leasing Services	1.56%	1.56%	1.56%
Leather and Allied Product Manufacturing	1.00%	1.91%	0.09%
Crop Production	0.63%	0.94%	0.32%
General Merchandise Stores	0.30%	0.30%	0.30%
Publishing Industries (except Internet)	0.22%	0.22%	0.00%
Unclassified Establishments	0.22%	0.33%	0.00%
Support Activities for Mining	0.21%	0.21%	0.21%
Motor Vehicle and Parts Dealers	0.15%	3.11%	-2.80%
Oil and Gas Extraction	0.09%	0.09%	0.09%
Utilities	0.04%	0.04%	0.04%
Textile Mills	0.00%	0.00%	0.00%
Pipeline Transportation	-0.01%	0.00%	-0.01%
Wood Product Manufacturing	-0.53%	0.00%	-0.53%
Plastics and Rubber Products Manufacturing	-0.78%	0.54%	0.00%
Nonmetallic Mineral Product Manufacturing	-3.28%	0.00%	0.00%
Paper Manufacturing	-7.57%	0.86%	0.00%
Transportation Equipment Manufacturing	-8.80%	1.46%	-0.12%
Electronics and Appliance Stores	-21.60%	-21.60%	-21.60%

EXHIBIT J - CHANGE IN LIFO RESERVE OVER TIME

Average LIFO Reserve as a Percentage of Total Assets



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